

**OF HUMANS AND AVATARS: HOW REAL WORLD GENDER
PRACTICES ARE BROUGHT INTO WORLD OF WARCRAFT**

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**OF HUMANS AND AVATARS: HOW REAL WORLD GENDER
PRACTICES ARE BROUGHT INTO WORLD OF WARCRAFT**

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To Ky, my alter-ego and other half. You gave me a whole world to explore.

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LIST OF SYMBOLS AND ABBREVIATIONS

MMOG	Massively Multiplayer Online World
H	Horde
A	Alliance
MpM	Males playing male avatars only
MpF	Males playing female avatars
FpF	Females playing female avatars only
FpM	Females playing male avatars

LIST OF GAMES CITED

EverQuest. Sony Online Entertainment. 1999.

Guild Wars: Prophecies. NCsoft. 2005.

Guild Wars: Factions. NCsoft. 2006.

Guild Wars: Nightfall. NCsoft. 2006.

Guild Wars: Eye of the North. NCsoft. 2007.

LambdaMOO. Pavel Curtis. 1990.

Myst. Cyan Worlds. 1993.

Second Life. Linden Labs. 2003.

Ragnarok Online. Gravity Co. 2002.

There.com. Makena Technologies. 2003.

Tomb Raider. Square Enix. 1996.

Uru. Ubisoft Entertainment. 2004.

World of Warcraft. Blizzard. 2004.

SUMMARY

This thesis explores the idea of how people ‘do gender’ in their online use of avatars, specifically avatar choice. A secondary question of whether or not a chatterbot can be used as a potential interviewer will also be examined as a tool acquiring large amounts of interview data.

Gender is one of the ways in which we structure our society, and is completely omnipresent. We cannot opt out of participating in our gender, as we are constantly performing and reaffirming it. Because of this, gender performance and choice spills over into all domains. This includes entertainment such as massively multiplayer online games, both in how the designers make the game, and what the players bring to the game. Deconstructing how and why people engage in these gendered practices and choices becomes an interesting avenue of research, because it allows researchers to partially separate the mental aspects of gender from physical attributes, as the players’ physical bodies are not actually in the game.

Through the lens of the popular massively multiplayer online game, *World of Warcraft*, this thesis will utilize a qualitative user research study to understand how gender affects avatar choices. Prior research identified areas where players brought real world gender norms into the games they played (Rosier & Pearce 2011). This research study will extend previous research by having players identify why they made the choices they made for their avatars, and how they feel about those choices.

The methodology for this study will also involve using a chatterbot as a way of gathering interviews. In normal person-to-person interview studies, recruiting and

organizing meetings for these interviews can often be a difficult task. This thesis brings in the idea of using a chatterbot as a mechanism to gather more interviews in a shorter time span to alleviate the problem of getting these one-on-one interviews in some types of studies.

CHAPTER 1

OF HUMANS AND AVATARS

“I am” – A powerful sentence in the English language. These two words are often used to assert and make claims about the individual. They are used to attach words to ourselves in order to piece together the parts of our identities. We say sentences such as “I am angry,” or, “I am an introvert,” to communicate these ideas. We use ideas such as nationality, religious affiliation, emotion, and states of being to express ourselves. These sentences can contain descriptions about both who we are in the moment and who we are constantly. But what of the sentences “I am female” or “I am male”? They are sentences stating our gender, yet they are something we rarely, if ever, have to say.

The Bit About Humans

Gender is a large part of our identity. We are given a gender, which is nurtured from birth. Generally, it is not acknowledged, at least not verbally (Lucal 1999, p. 791). We start to embed concepts relating our gender into our thoughts, behaviors, expressions, and actions from an early age. Eventually, the male and female part of our identity become an invisible part of our everyday life, permeating all we see, do, and touch. We dress in the appropriate clothes for our gender. We get involved in the appropriate activities for our gender (Shaffer 2000, p. 231). We address others as “Sir” or “Ma’am.”

A school of thought within sociology ascribes gender to cultural construction, and the actions displaying this gender to others as a gender performance. Gender is not just created from biology, but from the people, and henceforth, the culture around the individual and specifically the individual’s interactions (West & Zimmerman 1987).

Whatever the society decrees its gender roles to be will eventually become a large part of how an individual's gender is then molded into the roles that will form the next generation.

The Bit About Avatars

When someone plays a video game, he or she often plays through the use of an avatar, a 3D digital body allowing the player to move through the game space. Players make decisions about how this character looks and what this character does. In Gee's *What Video Games Have to Teach Us About Learning and Literacy*, he notes there are three types of identities in creating a virtual character: real, virtual, and projective (Gee 2003, p. 54). These are the human, the avatar, and the human pushing his or herself into the avatar. The decisions a player makes, whether consciously or unconsciously, eventually falls into the formation of one of those three categories to make the whole identity that is the player.

In *World of Warcraft*, a massively multiplayer online game (MMOG), players are allowed to choose their faction (Horde or Alliance), gender (male or female), race (e.g. Night Elf or Undead), and class (e.g. mage or warrior). Then they select small variations such as hair color, hairstyle, and piercings. All of these choices allow players to create a character he or she can become comfortable with and eventually identify with in some form.

In Which the Two Come Together

A thing to note is all of Gee's categories are shaped by gender. The gender of the player and his/her avatar ends up playing a large part in the identity the player projects to others in the game. Deconstructing concepts of identity by separating the human from the

avatar allows us to see the choices the player imposes upon the avatar, whether intentionally or not. It becomes helpful in the identity component of gender because the player is allowed to experiment with not only a gender and gender presentation, as given to the player by the game; but a gender and gender presentation given to him or her by the real world, which they then ascribe to the game world (Turkle 1995; Taylor 2003b). The choices they make end up mattering as he or she either rejects the real world or embraces it in the game.

In order to understand a bit more about this complicated relationship between human, avatar, and the choices in between, this thesis uses a qualitative study of *World of Warcraft* gamers to investigate players' choices about their avatars, particularly in regards to gender. The goal is to find where players draw the line between their gender and their avatar's gender and to find a rationale as to why players draw the line where they do, and while qualitative studies are small by nature, it will allow some insight into these lines.

CHAPTER 2

OF GIANTS AND THE PAST

Scholars have long broken apart what it means to be human, and particularly, what it means to be a human with gender, sex, and sexuality. The new digital age bears no exception, as it brings with it new tools to aid in analysis, and new mediums to explore. One of these forms is games, which allow the player to make both conscious and unconscious decisions about how he or she presents themselves to others.

Sociology and Gender

The sociological construction of gender asserts that gender is constructed by society. From the time we are born (pink versus blue) to our adult lives (women in dresses, men in suits to women in the kitchen, men playing football), our culture surrounds us in ideas of gender and what is appropriate for gender (Shaffer 2000, p. 231). The show of these gender roles can be considered gender performance, as it is more of a show for others regardless of how we want to behave in order to be accepted by others (Butler 1990, p. 179).

Social Construction of Gender

In the 1987 article, “Doing Gender,” West and Zimmerman explore the ways we enact ideas of gender in the real world, specifically in Western culture. The article describes how as a society, we create differences—which are not biological—between the sexes through our social interactions. As a society we decide the acceptable and appropriate behavior for men and women and create socially constructed ideas of

“feminine” and “masculine.” The authors break down the idea of masculine and feminine into four subcategories: gender identity, personal appearance, behaviors, and feelings. They also draw a distinction between sex and gender: “Sex is a determination made through the application of socially agreed upon biological criteria for classifying persons as females or males” while “gender in contrast, is the activity of managing situated conduct in light of normative conceptions of attitudes and activities appropriate for one's sex category” (West & Zimmerman 1987, p. 127). The idea of sex is specifically labeling an individual based on biology. The idea of gender is labeling an individual based on how we interact with others and expect them to interact with us. As we grow up and learn the rules of our given culture, we are socialized into appropriate gender behavior based on the initial sexual label we were given at birth. Sex and gender are not the same, but because they are so closely related in our minds, we often merge them into a single concept.

Shaffer builds on West and Zimmerman's work by examining how we are socialized into these gender ideals from birth, and elaborates on how specific gender ideals are enacted. From the time we are first known to our parents, we are immediately thrust into the socialization pattern of creating gender: “A newborn infant is usually blessed with a name that reflects his or her sex, and in many Western societies, children are immediately adorned in either blue or pink” (Shaffer 1999, p. 231). As children grow up, the socialization continues as toys and play patterns are gender-stratified: “This gender indoctrination continues during the first year as parents provide their children with 'gender-appropriate' clothing, toys, and hairstyles” (Shaffer 1999, p. 231). The difference between the boy and girl toys can be easily seen from a glance at any retail toy

department. Girls get the pink dolls. Boys get the blue trucks. Even toys that are similar in form are distinguished as “gendered,” e.g., “action figures” versus “dolls.” Through these toys, children learn what is expected of them regarding interests and behaviors: “Girls have typically been encouraged to assume an expressive role that involves being kind, nurturant, cooperative, and sensitive to the needs of others” (Parsons qtd. Shaffer 1999, p. 232), while “young boys are expected to become dominant, assertive, independent, and competitive” (Shaffer 1999, p. 232). Shaffer asserts that part of the growing-up process involves indoctrinating children into being masculine and feminine by society’s terms.

Lucal also discusses this binary system of gender: “Gender is pervasive in our society. I cannot choose not to participate in it. Even if I try not to do gender, other people will do it for me” (1999, p. 791). As Lucal argues, we have to make a choice, doing one gender or the other, as people have a psychological and social need to place others into male or female categories. As gender is a social practice, when a person does not easily fit into the binary category system, people have trouble interacting with them: “We have, according to Lorber, ‘no social place for a person who is neither woman nor man’ (1994,96); that is, we do not know how to interact with such a person” (qtd. Lucal 1999, p. 782). When we try to subvert these roles or behave in ways that are expected of the opposite gender, or even a neutral or non-gender, we make others uncomfortable because they cannot fit us into the category of male or female: “Causing people to be uncertain or wrong about one’s gender is a violation of taken-for-granted rules that leads to embarrassment and discomfort; it means that something has gone wrong with the interaction” (Lucal 1999, p. 791). We do not get out of doing the binary of gender

without causing confusion, as it is so pervasive in our society. Even in conversation, there is no way to initiate contact where gender is uncertain. When we say, “Miss,” “Ma’am,” or “Sir,” we are participating in the gender binary. When we speak of others in the third person, the gender binary is assumed. When someone’s gender is indeterminable or cross gender, something as simple as introductions can become difficult and cause embarrassment or discomfort to the person who says “Miss” when it is actually a “Sir” or vice versa, neither, or both.

Gender Performance

Goffman found in *Gender Advertisements* patterned examples of gender expression in the commercial advertisements in magazines. He called this “Gender Display.” Males and females displayed themselves in repeated, predictable patterns in regards to their singular selves as well as to each other. Among these were differences in the use of height and hands. Men were often shown taller than women, though exceptions to this rule included when the woman’s social class was higher than the man’s (Goffman 1979, p. 28). Women’s hands were shown more than a man’s, often caressing or “barely touching” as opposed to the men’s “utilitarian kind that grasps, manipulates, or holds” (Goffman 1979, p. 29).

Butler’s *Gender Trouble* devised the term gender performativity, which comes from the constant behavior of a society as a whole creating the standards of each gender for that particular society. She found a “tacit collective agreement to perform, produce, and sustain discrete and polar genders” (Butler 1990, p. 179). While ‘doing gender’ encompasses all gender, gender performativity focuses on the presentation aspect as well

as the fact performativity works independent of what any individual shows. It is the accepted visual presentation for the gender as a whole for the society.

Games and Gender

Researchers have been studying both how gender affects games and how gender presents itself in games. Whether the game is text-based, like *LambdaMOO*, or the more recent 3D style (like *Guild Wars*), all games have gender in them and affecting them. Studies on these games have run the gambit from looking at differences in male and female players play styles and preferences to why players would choose to play an avatar of an opposing gender.

Gender in Online Worlds

Bruckman discusses cross-gender play on the Internet in her 1993 study of text-based MUDs (multi user dungeons). Because of their lack of visual representation, MUDs were some of the first online environments, which allowed people to free themselves from gender constraints: “On many MUDs, it is possible to create gender neutral characters” (Bruckman 2001). Online environments like MUDs allow players to break the gender binary and explore not only what it means to be a gender but also what it means to be a self (identity and persona): “Gender is just one example of an aspect of personal identity that people explore on MUDs” (Bruckman 2001). One byproduct of this was of the apparent stereotyping of gender behavior as people tried the opposite gender: “Pavel Curtis [creator of the first open-ended social environment, *LambdaMOO*] has noted that the most promiscuous and sexually aggressive women are usually played by men” (Bruckman 2001), a pattern that persists in MMOGs today. She also notes another practice that remains common in MMOGs: “Unwanted attention and sexual advances

create an uncomfortable atmosphere for women in MUDs, just as they do in real life” (Bruckman 2001). Both of these are gendered and stereotypical practices.

In Turkle’s *Life on the Screen* (1995), the author explores the experiences presented by cross-gender playing characters. She found virtual environments gave players the opportunity to play the opposite gender: “But inside the MUD, the ratio is only three male characters to one female character. In other words, a significant number of players, many tens of thousands of them, are virtually cross-dressing” (Turkle 1995, p. 212). Because they were not attached to physical form, users were able to explore both genders: “For some men and women, gender-bending can be an attempt to understand better or to experiment safely with sexual orientation. But for everyone who tries it, there is the chance to discover, [...] that for both sexes, gender is constructed” (Turkle 1995, p. 223) as “gender-swapping is an opportunity to explore conflicts raised by one’s biological gender” (Turkle 1995, p. 213).

Two of Turkle’s interviewees noted issues when they became aware of cross gender play. One issue was from one interviewee’s attempt to play the opposite gender: “Garret says that when he helped others a female frog, it was taken as welcome, natural and kind. When he now helps as a male frog, people find it unexpected and suspect that is a seduction ploy” (Turkle 1995, p. 219). The other was from his girlfriend’s playing a male: “Rudy struggles to express what bothers him about his ex-girlfriend’s gender-bending in cyberspace” (Turkle 1995, p. 225). In both cases, the conflicts that arose were mimicking real world gender issues. In the first case, the male interviewee was able to experience the divide between how men are seen and how women are seen. In the second

case, another male interviewee is feeling the same confusion people feel in the real world when their ideas of gender and how gender should play out are challenged.

Other than the cross-gender play, another thing Turkle mentions is the performative aspect in both the identities we show and the ones we hide: “the play suggests that donning a mask, adopting a persona, is a step toward reaching a deeper truth about a real, a position many MUDDers take regarding their experiences as virtual selves” (1995, p. 216). One of Turkle’s interviewees mentioned this outlet for hidden identities: “Case says his Katherine Hepburn personae are ‘externalizations of a part of myself” (1995, p. 220). The avatars, even text-based ones, allow an outlet for parts of ourselves we may not otherwise let the world see.

Schaap’s *The Words That Took Us There* (2002) examines gender performance in a text-based virtual world. When interviewing, participants noted it is usually easy enough to tell the real world gender of the player regardless of the gender he or she plays online. The signs are not just obvious behaviors such as being overtly sexual in a female avatar (usually indicating a male player), but simple nuances such as real world females tending to use more adjectives in their character descriptions than their male counterparts. Even when only text-based information is available to players, they fall to gendered norms and conventions to create and display their avatar.

Gender in Games

Extensive research into gender in online virtual worlds and massively multiplayer online games has explored different ways that gender can drive identity, perception and play. In her writings on women and their avatars in *EverQuest*, Taylor found that players often do not feel constrained to their real world identities: “Users are not formally bound

to only play characters that correspond to their offline gender or to create identities that simply mirror their 'real world' temperaments” (2003b, p. 26). Players start deconstructing ideas of identity as they take themselves from the real world to the online world. In a study on female gamers in *EverQuest*, Taylor’s participants were often willing to explore and experiment with ideas of gender in online worlds: “Women in *EverQuest* are constantly engaged in playing with traditional notions of femininity and reformulate gender identities through aspects of the space that are directly tied to its nature as a game” (2003b, p. 27). For Taylor, identity can be a fluid concept online, and players can and do experiment with the traditional and standard ways of doing gender through choices of gender, appearance, and persona. She also points out that in online games, women are at no greater physical risks than men, which provides many women with a sense of empowerment.

In their 2007 paper, “Playing Dress-Up,” the women’s game collective Ludica also explored the way gender is performed through real-world and avatar costuming. They observed that costuming in historical reenactment (Miller 1997, 1998) parallels the highly gendered language of MMOGs, in which avatar dress-up is often couched in the masculine terminology of “gear” (Fron et al. 2007b). Although she avoids terms like “costume” and “dress-up,” Miller theorizes men also enjoy the accoutrements of masculinity afforded by the social permission to wear weapons in public. For women, experimentation with appearance through dress-up becomes a more natural extension of daily fashion choices, and Miller’s female participants commented that in some sense they are always playing dress-up. The feeling these females get ties back to the idea of gender and performance. In both avatar and real life form, they are showing off for others

and not only when they mean to. The females pick up on the idea they are performing even when they do not mean to. Like Taylor, Ludica also points out that avatar representation, particularly in games, tends to greatly exaggerate gender differences from a particularly distinct male point of view. They provide the example of an armor kit in male and female versions, referring to the female variant as “kombat lingerie,” with minimal coverage, while the male variant provides full (and more realistic for armor) coverage to the wearer (Fron et al. 2007b).

Maccallum-Stewart goes further to discuss cross-gender play specific to MMOGs, including the rationale behind why so many men prefer playing female avatars. The article notes previous motivations theorized for cross-gender play include males’ enjoyment of taking control of female’s figure and agency. Yee estimates that over 80% of male players practice cross gender play in online games (2006) and has hypothesized that control of the female body is one possible motivation for this (2003). Most often, this is attributed by researchers as “more concerned with mastery and control of a body coded as female within a safe and unthreatening context” (Kennedy qtd. Maccallum-Stewart 2008, p. 28). The Maccallum-Stewart article proposes these ideas are incorrect and cross gender play is a matter of players simply being used to the idea of taking female forms. But Maccallum-Stewart argues that cross-gender play is a factor of players’ previous experiences with games in which they use a female avatar: “Whilst many have expressed unease about Lara’s [Croft, of the *Tomb Raider* series] appearance and her relationship with the player, Helen Kennedy suggests that the experience is a deliberate act of transgendering” (Maccallum-Stewart 2008, p. 27). Through many early video games had no female characters, through games like *Tomb Raider* and its protagonist, Lara Croft,

male players are accustomed to being embodied in games through the female form: “By the time of MMORPGs the adoption of a female form was such a naturalized action that many players now choose to move across gender for aesthetic pleasure, rather than from a need to experience a new form of being” (Maccallum-Stewart 2008, p. 28). This argument suggests that male use of female avatars in games is, therefore, more a matter of aesthetic pleasure than of males trying to take control of female bodies. In contrast with the assumed connection with transsexual real-world behavior, the claim that many male players make that they prefer watching a female body also suggests this is a way for men to further assert their masculinity as well as their sexual orientation through cross-gender play.

Hussain and Griffiths (2003) focus on a deeper, more complex understanding and rationale for gender swapping in MMOGs. They argue that: “it may be that online games are moving away from the traditional video game content that focused on stereotypical representations of females and masculine themes” (Hussain & Griffiths 2003, p. 48). Social virtual worlds support this by allowing players more control over their avatar design; this is in sharp contrast to the “impoverished” view of gender represented by hyper-gendered characters common in role-playing games (Taylor 2003a). However, many role-playing games still advocate this approach as they are trying to create fantasy. Hussain and Griffiths also found over half of players practice cross-gender play: “It was also found that 57% of gamers had engaged in gender swapping, and it is suggested that the online female persona has a number of positive social attributes in a male-oriented environment” (Hussain & Griffiths 2003, p. 52). This also supports Bruckman’s findings in MUDs, another male-dominated online environment. They found game play

advantages were not the only motivations for cross-gender play: “Other reasons for gender swapping were that female characters had better in-game statistics, specific tools were only available with a female character, the class of character was only available in one gender, for fun, and just for a change” (Hussain & Griffiths 2003, p. 52). Yet at the same time in his studies of the economics of EverQuest, Castronova found that, in spite of their popularity, female avatars usually sold on online auctions (a practice known as “eBaying”) sold at average price of twelve percent less than the price of male avatars with equivalent attributes (2001).

While MMOG cross-gender play motives may be traced to game mechanics, Pearce has found that in virtual worlds or MMOGs which are not stat¹ and achievement based, such as *Uru*, players may have much more complex and nuanced motives. Her study of “*Uru Refugees*” from the defunct *Myst*-based MMOG who had migrated into *There.com* found only three incidents of cross-gender play (much lower than reported in fantasy MMOGs) where the all the participants were male. In one case, the player chose a female avatar to mitigate his wife’s possible concern about the potential for an online affair. In another, a father of a teenage daughter had created a household rule of playing characters of the opposite sex in online games to protect her from potential predators; when he joined his first online game, he felt compelled to follow his own rule. A third player suffered from real-world gender dysphoria and used the virtual world to explore a role into which he eventually transitioned in real life (Pearce & Artemesia 2009). All of these players were over 40 years of age. These variants suggest complex and distinct

¹ Stat – video game slang for statistics, which are the numbers correlating to qualities of the game character, such as strength or intelligence

motivations for cross-gender play between virtual worlds and fantasy role-playing games, which may also vary with age.

The Environment of Game Creation

Games reflect the environment in which they are created. The game is a reflection of the studio, and the studio, a reflection of the society. These games tend to be a lot of the same in regards to both structure and content:

“Today’s hegemonic game industry has infused both individuals’ and societies’ experiences of games with values and norms that reinforce that industry’s technological, commercial and cultural investments in a particular definition of games and play.” (Fron et al. 2007a, p. 1)

In regards to gender, this leads to games being created by certain groups of people - males, particularly white males: “The power elite of the game industry is a predominately white, and secondarily Asian, male-dominated corporate and creative elite” (Fron et al. 2007a, p. 1). White males playing games lead to white males buying games. In other words, those who play games are white males as well because it is their fantasies being played out. Together, the creation and absorption of games by white males make an environment friendly to white males often to the exclusion of other groups:

“[Hegemony] works in concert with game developers and self-selected hardcore ‘gamers,’ who have systematically developed a rhetoric of player that is exclusionary, if not entirely alienating to ‘minority’ players.” (Fron et al, 2007a, p. 1)

The designers and programmers who make games do so from a certain perspective, and that perspective creates a certain collection of ideas from which to draw

from in creating a game's experience: "we have to acknowledge the ways software and systems set out in advance a range of experiences and possibilities" (Taylor 2003a, p. 25). Even though game creators try to make games that appeal to as many people as possible, they still do so within the constraints of their society's norms: "Designers seek inclusiveness, but it is a particular (and familiar) form" (Taylor 2003a, p. 31). And because society uses gender in specific ways, these ways are integrated into the games made.

Chatterbots and Interviewing

Aside from gender and games, this thesis also looks at methodology utilizing a chatterbot to interview. Chatterbots are scripted artificial intelligence (AI) agents that are designed to use natural language processing in order to mimic conversations with people (De Angeli et al. 2001, p. 2). They are usually text-based and sometimes use an avatar to represent the bot. Chatterbots have been getting exceedingly complex to the point where they can be hard to 'break' (or have the bot respond nonsensically). They can ask and answer questions based on responses from the user. Current bots can use instant message programs, forums, chat rooms, and otherwise to talk to people.

The Turing Test

Before discussing chatterbots, one should first talk about the Turing Test. In his 1950 paper "Computing Machinery and Intelligence," Alan Turing proposed a test for computing intelligence that he called the Imitation Game but never actually attempted implemented this concept. The game was a basic test of gender to see whether or not someone could detect the difference in responses of a male and female interviewee. In its setup, the game has two players: a man, a woman as well as an interrogator. The

interrogator does not know which player is the man or woman as he or she can only see the responses to his or her questions. The interrogator's goal in the game is to figure out which player is the man and which is the woman. Turing then decided to change the game by wanting to replace one of the players with a computer with the idea of seeing if people could detect differences between the human and the machine. However, since its creation, there have been many attempts at the Turing Test, the renamed and evolved form of Turing's Imitation Game. The current version of the Turing Test has a human talking with the computer. If the human cannot tell the difference between a real human interaction and one with a computer, the computer is said to have successfully passed the Turing Test. There is even an annual competition for the application that most successfully passes the test, the Loebner Prize in AI.

ELIZA Therapy

Weizenbaum wrote in 1966 about ELIZA, which was created as an artifact of AI to study natural language processing. In his study, people had difficulty discerning she was a "chatterbot," instead thinking she was a real-life human therapist. She was designed to respond to user input as if she was human, particularly to play the part of a Rogerian psychotherapist. The design of her code allowed her to process text input to look for key words and then either push back at the user generic responses or slightly modified generic responses typically involving those key words (Weizenbaum 1966).

Later Weizenbaum wrote about the results of testing ELIZA, renamed DOCTOR for the experiment. He noticed three main results, two of which were the reduction of a single kind of therapy and the ability of humans to form attachments to computers. In the study, psychiatrists noted the question and answer format was at the core of the Rogerian

technique: “But that it was possible for even one practicing psychiatrist to advocate that this crucial component of the therapeutic process be entirely supplanted by pure technique” (2003, p. 370). ELIZA played the part of therapist so well her human ‘patients’ were able to quickly, easily, and deeply form bonds with her: “I was startled to see how quickly and how very deeply people conversing with DOCTOR became emotionally involved with the computer and how quickly they anthropomorphized it” (Weizenbaum 2003, p. 370). Participants felt like she was listening and responding to them, giving them a kind of attention and flexibility they could not get with a normal psychologist.

Computer Assisted Interviewing

CASI (computer assisted self interviewing) is a way of interviewing participants without a human interviewer. While it does not have the same conversational feel of the chatterbot, the research is interesting and relevant to the chatterbot interviewing methodology as CASI has the same basic component of the human interviewing his or herself so the experience for the user is extremely similar. CASI gives the user the same level privacy and self-paced interview that a chatterbot does; however, it does not allow for questions to be asked of it but neither does Interviewbot, the chatterbot for this study.

A study by Peiris et al. found their participants took to a more humanized version of a computer-based interview. When they compared short, abrupt ‘computer-like’ questions to longer, full sentence ‘human-like’ questions, their participants took to the human-like interviewer more: “Interviewees found an empathetic computer interview friendlier, more enjoyable and more interesting than one which is blunt or abrupt,” as well as “the computer acting as a polite human interviewer elicited greater honesty from

interviewees” then direct computer-like questioning (Peiris et al. 2000, p. 646). However, their research also resulted in a comment of ‘too friendly’, which implies “there may be a limit after which further humanizing of the interview process is detrimental to its outcome” (Peiris et al. 2000, p. 647). So while human-like questioning is good from the computer, participants may start rejecting it if they feel it is too friendly or trying to be too much like a human.

Newman et al.’s study into CASI found CASI techniques allowed participants to be more at ease divulging information than they were to actual humans. They noted previous “studies have shown that the level of information revealed by a respondent is positively related to the level of privacy of the interview” (2002, p. 294). When they tried it with CASI, they found the same idea of privacy leading to more information from the subject applied: “Comparisons of CASI with face-to-face interviewing have concluded that subjects completing computer interviews disclose more socially undesirable attitudes, facts, and behaviors” (Newman et al. 2002, p. 294). The participants disclosed more to the CASI system than to the human for the difference to be significant: “These differences reached conventional statistical significance levels in opposite directions – significantly more reporting of stigmatized behaviors with audio-CASI and significantly more reporting of ‘psychological distress’ in face-to-face interviewing” (Newman et al. 2002, p. 296). The CASI system provided the participants with an outlet they felt they could trust more because it was not human, allowing for the researchers to get more data out of them than had they used human interviewers.

Another study by Couper and Rowe compared in-person human interviews to computer assisted audio interviews (1996, p. 91). They found “differences in the

substantive responses provided to these items by [those] who did [computer interviews] and differences in the data quality of subsequent interviewer-administered items” (Couper & Rowe 1996, p. 102), Their findings also suggested “that issues of capacity (literacy and vision) and motivation (including computer experience) may have an impact on the successful implementation of [computer interviews] with a diverse population” (Couper & Rowe 1996, pp. 101-102). Participants’ inability to read and see the questions as well as the motivation to complete the self-interview were the biggest hindrances Couper and Rowe found when trying to get people to use computer-based interview techniques.

The Current Chatterbot

Chatterbot research has found people react positively to chatterbots. A study by Yin et al. placed embodied chatterbots in health centers in an attempt to encourage more walking among adult Latinos. The bot is half coded script and half avatar resembling an older Latino woman. When engaged, the bot starts off with small talk then moves on to counseling the user on his or her exercise habits. Yin’s study found participants who used the chatterbot as an intervention into their exercise habits stayed exercising longer and completed more steps per day than those who did not receive the chatterbot intervention (Yin et al. 2003, p. 3).

Another small ethnographic study examined Alice, a slightly more evolved form of ELIZA though removed from ELIZA’s therapist aspect. Alice is:

“an entertaining chatterbot created by Dr. Wallace in 1995 and continuously improved over the years. Alice asks and answers questions,

acts as a secretary reminding people of appointments, spreads gossips and even tells lies.” (De Angeli et al. 2001, p. 4)

The study involved “10 computer-literate co-workers [who] were invited to interact with Alice over the period of a week” (De Angeli et al. 2001, p. 4). After analyzing the interactions, De Angeli et al. found similar results to the CASI experiments: “Participants appeared to be willing to disclose and to ask for intimate information. This included descriptions of physical aspect, feelings, and desires” (De Angeli et al. 2001, p. 5). The ability to talk to a non-human entity gave participants the sense of privacy and allowed them to reveal information they would not otherwise give out. They also found that participants tended to place themselves over the chatterbot: “It emerged that users wanted an asymmetric relationship in which they were the dominant position” (De Angeli et al. 2001, p. 6). Because the bot was not human or ‘alive’ they considered it less than themselves. Another result that mimicked previous research was participants’ ability to: “Users clearly anthropomorphised[sic] during the interaction. All participants greeted Alice, thanked her and used many direct and indirect expressions of courtesy” (De Angeli et al. 2001, p. 6). Like ELIZA, participants treated Alice as if she were human even though they knew she was a scripted AI attributing emotions to her as well as getting emotionally attached in return.

CHAPTER 3

OF PAST PROJECTS AND LEAD-INS

Two qualitative research studies were conducted as lead-ins to this thesis work. They were both small and used as pilot studies to gauge the area of interest. The first study was conducted in spring 2009 as an undergraduate research project under a grant from Georgia Tech's Undergraduate Research Opportunities Program. It looked at the various ways players could bring gender into online games apart from the original game design (Rosier & Pearce 2011). The second study was conducted in spring 2010 and examined both the practical use and interviewee acceptance of a chatterbot as interviewer.

Both studies were approved and completed through Georgia Tech's Internal Review Board. The first study (the study on gender and online worlds) completed under Protocol H09011. The second study (the initial chatterbot study) completed under Protocol H10007.

A Study Regarding Gender

The aim of the spring 2009 gender study was to understand the similarities and differences between gender play and attitudes across these different genres (Rosier & Pearce 2011) through what Pearce has termed a 'latitudinal,' or multi-world study (2010). The study involved interviewing people from the games *Second Life* and *Guild Wars* in order to compare choices in a role-playing game versus a social world. Players from the two games were asked about their avatar choices, perceptions of gender in the game, and gendered behaviors online.

Setup

The participant goal for the study was to interview 40 people from *Guild Wars* and *Second Life* using 20 from each game. The 20 people were then broken into four groups of five: men playing male avatars only, men playing female avatars, women playing female avatars only, and women playing male avatars. Participants were recruited through in-world messages and through forums, excluding mature content areas in both worlds. Participants volunteered for interviews by game: 10 in *Second Life* and 15 in *Guild Wars*. Interviews were conducted through the in-world private messaging system and outside instant messaging (i.e. AOL Instant Messenger [AIM] and Yahoo Instant Messenger [YIM]).

Population Sample

The participants used for the study varied in ages, with *Second Life* having the largest age range. In *Second Life*, the average age was 34 ($n = 10$) with the youngest being 24 and the oldest being 50. The average age of males playing a female was 37 ($n = 1$). The average age of males playing males only was 33 ($n = 4$). The average age of females playing a female was 34.5 ($n = 5$). In *Guild Wars*, the average age was 27 ($n = 15$) with the youngest being 18 and the oldest 47. The average age of males playing females characters was 27.6 ($n = 5$). The average age of males playing male characters only was 22 ($n = 5$). The average age of females playing female characters only was 32.2 ($n = 5$).

No test of statistical significance was made because the population sample size is too small for there to be one. Also, this study was intended to be used a qualitative pilot study, not a quantitative one. In qualitative studies, statistical significance is less

important as it focuses on the trends and themes that emerge from the data. Conclusions can be drawn, but they are of limited nature as they are only to this particular sample and can not be generalized to the general population. This tends to be an issue with most sociological research, and since human behavior is nuanced anyway, most qualitative research findings are only good for a given population in a given set of circumstances. However limited the conclusions, it still provides insight into the thoughts and behaviors of the population, in this case male and female players of both *Second Life* and *Guild Wars*.

Interviewees were classified based on the characters they were currently using: males playing male avatars only, males playing female avatars, female playing female avatars only, and females playing male avatars. Of the eight slots to be filled, only half filled up to the five participant mark. The rest were incomplete. The slot for females playing male avatars on both *Guild Wars* and *Second Life* remained unfilled at the end of the study.

Table 1: Breakdown of 2009 Gender Study Population

		Males	Females
GUILD WARS	Males Playing	5	5
	Females Playing	0	5
SECOND LIFE	Males Playing	4	1
	Females Playing	0	5

When trying to fill interview slots in *Guild Wars*, males playing female characters filled up first; next, females playing females only and males playing males only filled up

about evenly. When trying to fill interview slots in *Second Life*, females playing females only and males playing males only filled up first.

Data

Players were asked about their perception of gender ratios within the game, both of the real-life gender of players and the gender of the avatars. In *Guild Wars*, the males playing female avatars responded to an approximate real life gender ratio of 80% male to 20% female players and an even 50% male-to-female split for avatars. When asked about the avatar ratio, the males playing male avatars were split, with two male interviewees saying the ratio was an even 50% male-to-female split for avatars and two saying the ratio was 25% male to 75% female. The females playing female avatars were in disagreement, using numbers from 90% to 60% male for the real world gender population, and 30% to 67% male for the avatar gender population.

Second Life had males playing males in relative conformity regarding the real world gender of the population, quoting 40% or 50% male. In avatar gender, however, there was slight variance, with most players citing gender distribution between 35% and 50%. One male thought the ratio was 1 to 99, male-to-female. The females playing females only described the real world ratios as being 70% male to 30% female with one using a 55% male to 45% female ratio. The avatar gender ratios used were between an even 50% male to female split to a ratio of 70% male to 30% female. One interesting and surprising outcome was that, for *Second Life*, the males perceived more females for both in-world and real world gender ratios, while the females perceived the opposite, citing more males than females for the in-world and real world gender ratios.

Four primary reasons for avatar gender choice were cited, and in some cases, repeated among many of the interviewees. The top motivations for gender choice were nearly the same in both *Guild Wars* and *Second Life*. These included (in order of popularity): same gender as player, aesthetics, immersion, and opposite gender attraction. The reason most often given for choosing one gender avatar over another was because it was the same gender as the player. Players giving this answer felt the need to choose their real world gender for their avatars because it was the ‘normal’ and ‘natural’ thing to do, conforming to traditional ideas of gender identity, thus enacting Lucal’s gender binary.

Another reason players chose their avatars was for aesthetic reasons. In *Guild Wars*, four of the five males playing both female and male avatars gave aesthetic reasons for why they chose their avatars (primarily their female avatars). In *Second Life*, aesthetics was the reason given by two of the female interviewees playing female avatars only. It is difficult to ascertain from the data precisely how much these aesthetic choices relate to ‘doing gender’ and how much can be ascribed to other ingrained cultural norms. On the one hand, these are male players playing female characters, on the other, their aesthetic choices may be informed by their sexual orientation or, as Yee suggests, the power of the male gaze and the masculine desire to control the female body. Some women playing female avatars—two from *Guild Wars* and one from *Second Life*—gave gender-conforming aesthetics as the reason they chose their character. These motivations display more obvious ways of ‘doing gender,’ especially when presenting in an avatar that coincides with ones real world gender.

A third reason players gave was that gender choice was a way for players to immerse themselves in the game through avatar embodiment. In *Guild Wars*, immersion

was given as the reason for gender choice by one male playing both female and male avatars and twice by females playing female avatars only. In *Second Life*, immersion was given as the reason by one of the males playing male avatars only and by three females playing female avatars only. Thus, players often chose the avatar most like them (including gender) to enhance immersion in the game. Some were uncomfortable or unable to place themselves in the guise of the opposite sex, although this seemed easier for men than women. Pearce notes that in some MMOGs and VWs, players go to great lengths to make variations of their real selves, even simulating age where that option is available. One interesting note here, however, is the way in which one player both conformed to a female role and subverted it in the form of trying to be a ‘badass girl.’ So here she is *playing* with gender, trying on a more atypical role for a female.

The fourth reason cited for avatar choice was attraction to the opposite sex, a reason that was given twice in *Guild Wars* and once in *Second Life*. Males are supposed to like females, and part of ‘doing gender’ and being masculine for heterosexual males is looking at and appreciating the female form. Typically opposite sex attraction is the reason players *think* males presenting as female avatars choose to play as such. Yet this study also suggests a broader and more nuanced range of explanations. Here, the interviewees are being appropriately masculine in their objectification of women. Hence they are ‘doing male’ by ‘playing female.’ Thus, there is a tension between controlling the agency of a female character, and the traditional notion of the male gaze falling on an objectified female body.

An interesting finding also emerged as a byproduct of the core research area for this study. Tracking the use of emoticons during interviews revealed distinct differences

between males and females that translated across worlds, but in different ratios. Among *Guild Wars* players, the males playing males only had an average count of .2 uses of emoticons per interviewee (n = 5). The males playing female characters average emoticon count per interviewee went up to 1.2 (n = 5), a slight but noticeable increase. However, when counting the use of emoticons by females playing females, the emoticon use increased to six (n = 5) uses per interviewee. This increased use of emoticons among women was mimicked in *Second Life*, although overall emoticon use across both genders was higher. The *Second Life* males playing males only count was 4.25 (n = 4), and the females playing females only count rose as well to eight (n = 5) uses per interviewee. As the study only included one male playing a female in *Second Life*, whose emote use was zero (n = 1), an accurate gender comparison in emote use between the two worlds cannot be determined with this particular study. A reason for emoticon use to be more normative in *Second Life* is because of the nature of the environment. *Second Life* is social world which has a more relaxed, unstructured environment as opposed to *Guild Wars*' more game-focused fighting and altercation-based environment. Because of this, the social environment (a more feminine thing to do) allows people to be more amicable to showing emotions as it tends to be inappropriate to do so during 'battle' (a more masculine thing to do).

The reason these results were interesting is because the finding is an unexpected 'doing gender' habit that translated from the real world to the virtual world. Shaffer mentions the 'expressive role' (Shaffer 1999, p. 232), which expects women to be more emotional as normative behavior. Because of this idea, women feel they are expected to express emotion more often than men. Throughout the interviews, real world women

chose to be more expressive than their male counterparts through one of the few affordances at their disposal: emoticons.

When giving reason for their avatar use, players, particularly males, found a need to defend their playing of the opposite gender and reaffirming their heterosexuality. In both *Guild Wars* and *Second Life*, the males who played both male and female characters usually defended their sexuality when asked why they choose to play female avatars. These interviewees wanted to assert their normative sexuality as heterosexual males, displaying a gendered concept called ‘hegemonic masculinity,’ even while doing stereotypically ‘female’ activities, such as shopping: “Hegemonic masculinity is the idea there is an ideal set of male behaviors of which ‘Heterosexuality and homophobia are the bedrock’” (Donaldson 1993, p. 645). Within hegemonic masculinity, males are prime and females are dominated. Hegemonic masculinity prioritizes everything male and frowns upon female-oriented and especially homosexual behaviors. Thus interviewees felt the need to prove and reassert their masculinity through their choice of a female avatar to avoid the choice being questioned. The finding also reaffirms the Hussain and Griffiths’ work that males asserted their normative heterosexuality by stating their attraction to women as their reason for cross-gender play. Again, in contrast to real world transsexual behavior, the choice of female avatar becomes a way of ‘doing masculinity’ by ‘playing gender.’

In *Guild Wars*, males who played male avatars felt the need to step up and defend females when they were being approached and propositioned by male avatars. Of the five males interviewees playing male avatars, two of the interviewees mentioned feeling the need to do this and not really thinking about it when they did it. As Shaffer notes: ‘boys

have been encouraged to adopt an instrumental role, for as a traditional husband and father, a male would face the tasks of providing for the family and protecting it from harm' (Shaffer 1999, p. 232). Part of being in the instrumental role is protecting those that are being provided for, those that are weaker. Instrumental roles are active roles in society, a contribution to one's group. Protecting females is a physical act and part of doing masculinity correctly and, as such, connotes the role of a properly functioning male in society. This is an obvious case where men are doing gender online in ways that parallel doing gender in the real world.

Conclusions

As big a part as gender is in our offline interactions, it makes sense that doing gender would be translated into our interactions online. Online worlds are as much about behavior and identity as they are about play, and while players do sometimes play with gender, more often than not, our socialized notions of 'doing gender' prevail. Such findings as males' tendency to alternately harass or protect females from other male players, and females' unconscious expression of emotion through emotes are just two examples.

The aim of the study was to understand if people 'do gender' in online worlds, through their own perceptions of avatar gender. The preliminary answer is yes, but in varying and complex ways. It should be noted, however, that because of the small number of participants, the findings from this gender study are preliminary and only reveal potential areas of study.

A Study Regarding Chatterbots

The chatterbot study compared four different types of interviewing methods in order to understand where the chatterbot would place when put against normal interviewing techniques. The goal of the study was to see how people would feel about using a chatterbot as an interviewer as well as to see if the chatterbot interviewer was mechanically and psychologically possible with the limited skills and technology available to me. People have been known to break bots, so it was necessary to see if people were willing to following along with a chatterbot in a research setting. Also, it was a chance for me to explore a personal goal of getting the bot to ask questions without them being triggered by words and phrases as ELIZA did. I wanted to be sure I could get a product on my ability without placing an entire thesis or equivalent on the line with it not working out.

Setup

Participants were recruited through email lists and social media. Four people participated taking approximately thirty minutes each. Participants engaged in four rounds of participation in an interview technique followed by the evaluation of that technique. The techniques selected for the comparison were: in-person, online survey, instant messaging, and chatterbot. They were interviewed on basic topics: music, movies, games, and classes. During the chatterbot interviews, participants were explicitly told they were working with a bot. However, due to time and technology constraints, the bot was a human mimicking a bot through the use of a script and response rules based on example code and what the bot would presumably be capable of doing. Participants randomly selected an interviewing method and a topic from slips of paper where the names were placed face down.

All interviews were scripted with all questions being asked using a variation of fill-in-the-blank questions over the topic they chose. An example question was “What is your favorite <insert interview topic>?” Once the participant finished all four rounds, a final evaluation regarding the overall experience was conducted. The round evaluations and final evaluations were all conducted through SurveyMonkey.

Data

Participants were able to evaluate what they did and did not like about the chatterbot. When filling in what they liked, respondents were able to pick up on an unintended goal of the chatterbot:

“I could site and deliberate and edit my responses, but there was also something of a conversational feel”

The original intent of the using the chatterbot was to create a mix between a fill in response survey and an in-person interview. A side effect of this was that participants were able to get the feel of chatting with someone without the in-person pressure of having to answer responses immediately. Three of the four respondents noted similar reactions to the bot.

While users found the chatterbot somewhat useful and conversational, they also found themselves unable to form attachments to the bot. Their biggest issue was the bot’s inability to intelligently engage with them:

“I felt like I only could answer the question given. I didn’t know if it was okay to ask clarifying questions.”

“the robotic way of questioning made me feel like I was communicating with a machine rather than person. Had more personal questions been asked or the

follow up question been something other than ‘why’, I would have felt differently”

“there was no engagement with the content of my questions”

The bot’s inability to ask and answer questions relating to what the interviewee just stated were detrimental to the interviewee’s ability to engage and attach themselves to it.

The chatterbot was also compared to other techniques. When being interviewed via an instant messaging service, there were both pros and cons:

“I felt like they weren’t really interested in my responses, but was just following a script. They nodded when it was and was not appropriate”

“Interviews via IM give me more time to compose my thoughts, and I’m not tripping over my own words”

The good and bad of the instant messaging interview tended to align along with the chatterbot’s interview. People liked the idea of having time to compose their thoughts without someone staring them down but did not like the scripted chat that seemed to disengage them. The in-person interview ended up being the opposite. Interviewees felt like they were being engaged but did not have time with their responses, making such comments as:

“got the sense somebody was actually listening and responding to me”

“less time to formulate your answers”

The in-person and instant messaging interview sets were opposite from each other as participants found the qualities they liked in the in-person interviews were lacking in the instant messaging. Participants were also able to note the benefits and disadvantages of each of them.

In the final evaluation, the method chosen as the best by three of the four participants was the IM interview, and yet three of the four participants choose the chatterbot as the least favorite method. Respondents chose the IM interview because they felt a connection to someone and that someone was actually thinking and using their responses, commenting that it:

“allows intelligent responses from the interviewer while still giving me time to edit and deliberate”

They rejected the chatterbot for opposing this. Because there was no one on the other side responding to them, they did not feel their responses were being heard:

“It was too detached and my responses didn’t feel like they were being collected or even considered by anyone”

The final evaluation showed similar response in interviewer preference, three of the four chose the in-person interviewer as the best and all four chose the chatterbot as the least preferred. Users cited “dynamic” and “fun” as well as visual notice of the consideration of their responses to be reasons why they favored the in-person interview. “Robotic” and “detached” were reasons they did not favor the chatterbot.

Conclusions

The study population sample size was extremely limited and does not allow for any solid conclusions to be made. More participants would have been preferred. However, it does give a starting point and limited insight that can be applied to future work and the study this thesis utilizes.

The results of this study found, while feasible and doable, a chatterbot used as an interviewer would have to be carefully crafted. From the final evaluation, it seems to be

the idea of the chatterbot rather than the chatterbot itself that is being rejected by the users. If the preconceptions about the chatterbot can be overcome and a more sophisticated response system developed, the interviewing chatterbot can potentially be a useful tool for interacting with users. While initial tests showed promise and back up past research, more research and refined testing needs to be done on a larger population size in order to make more grounded claims.

CHAPTER 4

OF METHODOLOGIES AND POPULATION SAMPLES

Through the use of a SurveyMonkey survey as the tool for delivery, participants were able to both be interviewed and evaluate the interviewer. The study consisted of three components: interview group self-selection, chatterbot interview, and a chatterbot evaluation. A single page on the survey represented each of these components.

The study was approved and completed through Georgia Tech's Internal Review Board (IRB) under Protocol H10202. The IRB and thesis proposal approval process took about five months to complete (July through October 2010). Another month and a half was given to setting up and fixing the chatterbot service (November to mid-December 2010), and the recruitment and interviewing process took another month and a half (mid-December 2010 to end of January 2011).

Setting up the Study

The main areas of investigation for this study are *World of Warcraft* and chatterbots: *World of Warcraft* for the gendered play of the players and chatterbots for their methodological use.

Why *World of Warcraft*?

World of Warcraft was chosen for a few reasons. One reason was there are no base attribute differences between its male and female avatars, though each race within *World of Warcraft* has some minor differences. Attributes relate to a character's ability to fight; for example, an attribute of 20 strength will add an additional 20 points of damage

on top of whatever points of damage the weapon will do to an opponent. In *World of Warcraft*, characters start off with relatively similar attributes. The strongest difference is in physical appearance: the actual gender of the avatar, what the user chooses to dress the avatar in, and selectable physical differences (such as facial marking and earrings). The second reason is for the Horde/Alliance duality. Horde and Alliance are the two factions within *World of Warcraft*. The types of avatars available for each are different. Horde avatars appear to be more animal or non-human, while Alliance avatars are mostly different representations of humans. The humanoid versus monster duality changes the way we see and present gender, because in the monstrous avatars, the gender connection is both present in disconcerting ways and not as prominent.

Why Chatterbots?

A chatterbot as the interviewing agent was chosen because of past research projects involving interviews as the primary method for gathering data. The interviews in the research were scripted where the questions were created beforehand and had few follow-up questions. In addition, the interviews were often hard to schedule as both interviewee and interviewer had to set aside time to conduct the interview, which often leads to a decrease in the number of interviews being conducted for a research project. The idea of the chatterbot was brought in to relieve some of these issues. It would allow interviews to be done en-masse (thereby increasing the sample size from normal interviewing techniques), on the interviewee's time, while still allowing some of the flexibility of human-conducted interviews.

For this thesis in particular, the chatterbot is being used to try and increase the participant sample size. A larger sample size in this research would show whether or not

prior research findings from the spring 2009 project are generalizable. In this case, the 2009 project found beginnings of interesting phenomena, but the sample size was too small to make generalizations about the population being interviewed.

The interviewing bot used for this study was written using a combination of AIML (Artificial Intelligence Markup Language, a coding language similar to the one used for ELIZA) and pandorabots.com (a browser-based chatterbot hosting service). The AIML code containing the interview questions was written in a text file then uploaded to the website. The code allows the bot to respond to the interviewee in a scripted manner. For example, when the bot says, “What is the gender of your primary avatar?” and the user responds with something, the bot will follow up with “Why did you make that choice?”

While the basic concept of a chatterbot interviewer has been tested before, the question of the chatterbot being useful as an interviewer is still relevant. Few studies have been done regarding using a chatterbot as interviewer and the data is limited (Yin et al. 2003; De Angeli et al. 2001). More research with more participants is required to make any claims, and this thesis presents an opportunity to either confirm or reject the previous research.

Making Participants Out of Population Samples

The interviewing groups were made by breaking apart the different factions and different genders of both players and avatars. Players could be either male or female and play either their gender only or the opposite gender, which could include those of player’s gender. They were also divided by the faction they chose to play: Horde or Alliance.

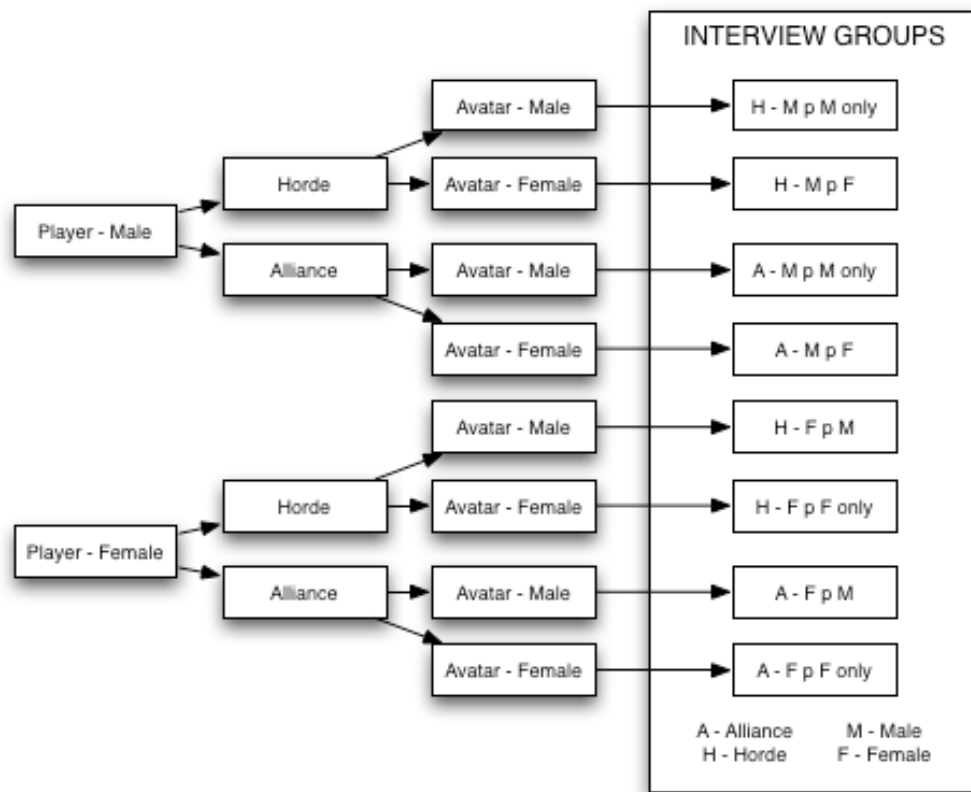


Figure 1: Interview Group Breakdown

Participants were recruited through social media (like Facebook), emails, email lists, through the in-world messaging system, and discussion forums. The message used to recruit included a short, one sentence description of the project and a link. The message mentioned the study was on avatar choice and used a chatterbot to collect data. While participants were not explicitly told they were using a scripted AI agent, they were told they were going to use a ‘chatterbot’ named Interviewbot with the implications the bot was not an actual person. They were also informed they had to be over 18 and have an Internet browser that worked with the chatterbot service. Participants were volunteers and not compensated for their participation.

Once participants used the link in the message, it sent them to a SurveyMonkey survey. The first page of the survey included a text box where participants had to input their birthday for age verification. If the age was 18 or over, they were allowed to continue to the second page which contained the consent form. Participants were asked to read it, check boxes equating to their consent, and then signing the consent form by typing their avatar name.

Ideally the recruitment method would produce both a nuanced understanding and a representative sample of the population being studied, but most recruitment methods are biased in some form. Few studies can claim complete representativeness of a population. However, as long as the subset population for the study has acquired is identified, the study can make claims about that population subset with the idea that subset provides insights and possibilities into the major population. In the case of this study, the major population is *World of Warcraft* players and the subset population is those players who frequent specific forums.

Interview Group Self-Selection

On the third page of the survey, participants selected which interview group they belonged to for the study. Faction and gender divided the groups. To do this, the player chose a sentence declaring his or her gender and the faction and gender of his or her main avatar.

Each participant answered questions to self-select themselves into his or her interview group as part of the survey.

1. What are your gender and the gender of your primary avatar?
 - a. I am a MALE with a primary HORDE MALE avatar

- b. I am a MALE with a primary HORDE FEMALE avatar
 - c. I am a FEMALE with a primary HORDE FEMALE avatar
 - d. I am a FEMALE with a primary HORDE MALE avatar
 - e. I am a MALE with a primary ALLIANCE MALE avatar
 - f. I am a MALE with a primary ALLIANCE FEMALE avatar
 - g. I am a FEMALE with a primary ALLIANCE FEMALE avatar
 - h. I am a FEMALE with a primary ALLIANCE Male avatar
2. Do you have other avatars in your primary faction? [Yes / No]
 - a. What are their genders? [All Male / Mostly Male / Even Split / Mostly Female / All Female / Not Applicable]
 3. Do you have avatars in the opposing faction? [Yes / No]
 - a. What are their genders? [All Male / Mostly Male / Even Split / Mostly Female / All Female / Not Applicable]

Playing with an Autonomous Interviewing Agent

The survey page for the chatterbot gave the participant instructions for connecting with the chatterbot and completing the interview. In order to use the bot, the participant opened a separate page in his or her browser containing the Pandora bot in an html page. By typing in “INTERVIEW ME” to the bot’s input text field, the user began the interview. Once the interview was finished, because of the structure of the chatterbot, participants then copy/paste the chat from the browser window containing the chatterbot to the browser window containing the survey. In the browser window containing the survey, the chatterbot page had a comment field to hold the chat text.

Evaluating Gender in Games

The questions the chatterbot asked were designed in such a way as to mimic a human-conducted interview even though the responses were scripted. In normal human-conducted interviews there are often unplanned follow-ups that come after an interviewee answers certain questions. Eventually, these follow-ups become, in a way, planned. For instance, when an interviewee responds to a main question, a follow up that nearly always occurs is ‘Why?’

The chatterbot asked the following questions regarding the participant’s avatar choice:

1. What is the gender of your primary avatar?
 - a. Why did you make that choice?
 - b. Do you feel that gender choice influences your behavior in the game?
 1. Why would you say that?
2. What is the faction of your primary avatar?
 - a. Why that faction?
 - b. Do you feel that faction choice influences your behavior in the game?
 1. Why is that?
3. How do you make the decisions about how your avatar dresses?
 - a. Why?
 - b. How do you feel about those decisions?
4. Do you feel your real world gender impacts your in-game interactions with players?
 - a. How so?

b. Does other players' gender impact your in-game interactions with them?

1. Why is that?

Evaluating the Chatterbot

The second to last page of the survey allowed each participant to evaluate the chatterbot.

The following questions were asked:

1. What did you like about using the chatterbot? Why?
2. What did you not like about using the chatterbot? Why?
3. What is your general opinion of using the chatterbot? [1 (I really like using it), 2, 3, 4, 5 (I really don't like using it),]

CHAPTER 5

OF WARCRAFT AND GENDER

MMOGs and other online worlds offer a playground in regards to gender. At the character creation screen, players have an opportunity to choose which gender to present through their avatar. The decision to stay with their own gender or go with another and the decisions they make while in-game regarding their avatar and their behaviors can provide insight into both the people and the societies from which they come.

World of Warcraft's two distinct factions, Horde and Alliance, provide an extra complexity to this relationship. The more monstrous Horde compared to a more humanoid Alliance give gender a bit of a twist. The undead and bestial bodies of the Horde tend to neutralize or minimize most of the gender features of the avatars, but it also makes the gender features they have all the more disconcerting.



Figure 2: Examples of Horde and Alliance Starting Female Avatars

Participants for the study were gathered from each combination set of:
Horde/Alliance, male/female player, and male/female avatar.

The Participants

There were 46 participants who completed the interview group self-selection and the chatterbot interview. Of these, 27 were male and 19 were female. Out of the 27 males, 9 were Horde and 18 were Alliance. Out of the 19 females, 3 were Horde and 16 were Alliance.

Table 2: Breakdown of Study Participants

	MpM	MpF	FpF	FpM	
Horde	6	3	2	1	12
Alliance	11	7	13	3	34
	17	10	15	4	46

The participant's ages ranged from 20 to 63. The average age among the males was 26 ($n = 27$) and among the females 30 ($n = 19$). The average age among the Horde players was 23 ($n = 12$) and among the Alliance was 29 ($n = 34$). Overall among all the groups, the ages averaged out fairly even, with only a 10-year difference between the highest average (females playing Alliance females) and the lowest (males playing Horde males). There is no test of statistical significance in these averages because the number of participants is too small and qualitative work, such as the analysis that follows, does not lend itself well to quantitative analysis.

The participant sample seems to be similar in demographics to Yee's research (2006) with some minor variations and differences making this study's participants

generally representative of the population. Both this study and Yee's had the majority of respondents as male and average over-all age in the upper 20's (2006, p. 16). Once difference is Yee's demographics were overwhelmingly male (85%) and this study had a more even ratio (59% male, n = 46). Also in both studies, the female participants were, on average, older. Yee's research also showed males more likely to cross-gender play, which was true for this study, and that they were significantly more likely, which was not (2003).

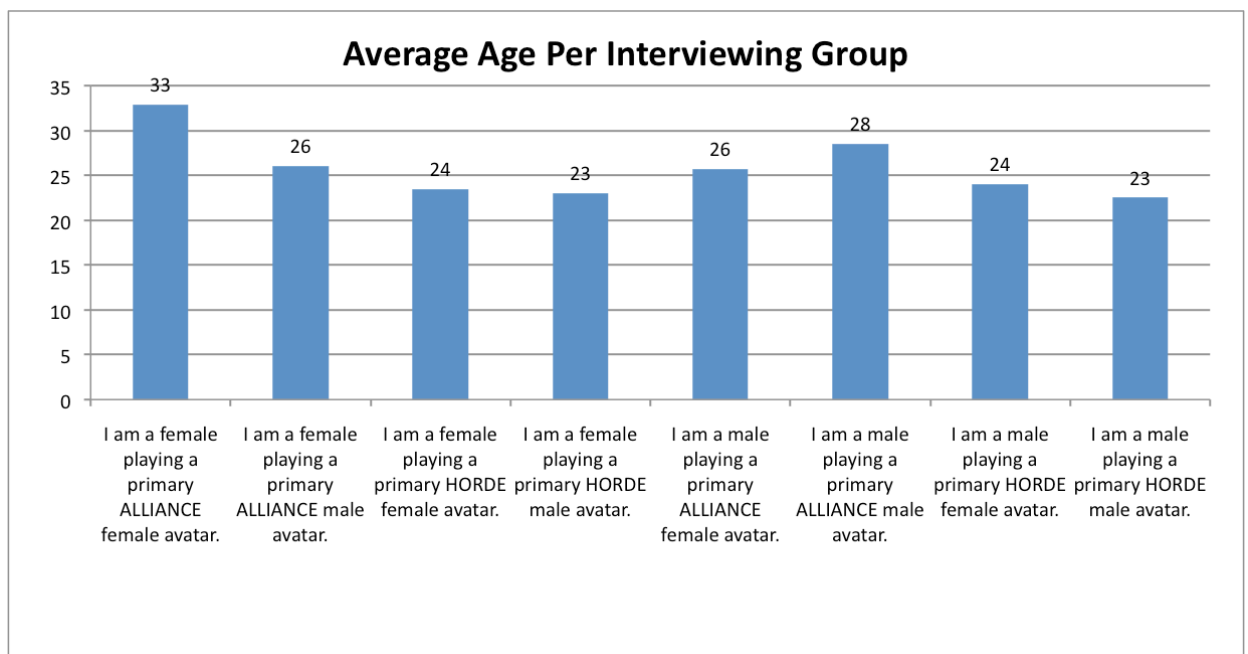


Figure 3: Average Age Per Interviewing Group

Avatar Play

Unlike in the *Guild Wars / Second Life* study, cross-gender play was not as strong of an occurrence. In each of the interview groups, there were more participants whom were players playing the same gender than players playing the opposite gender. For example, the females playing Alliance females outnumbered the females playing Alliance males.

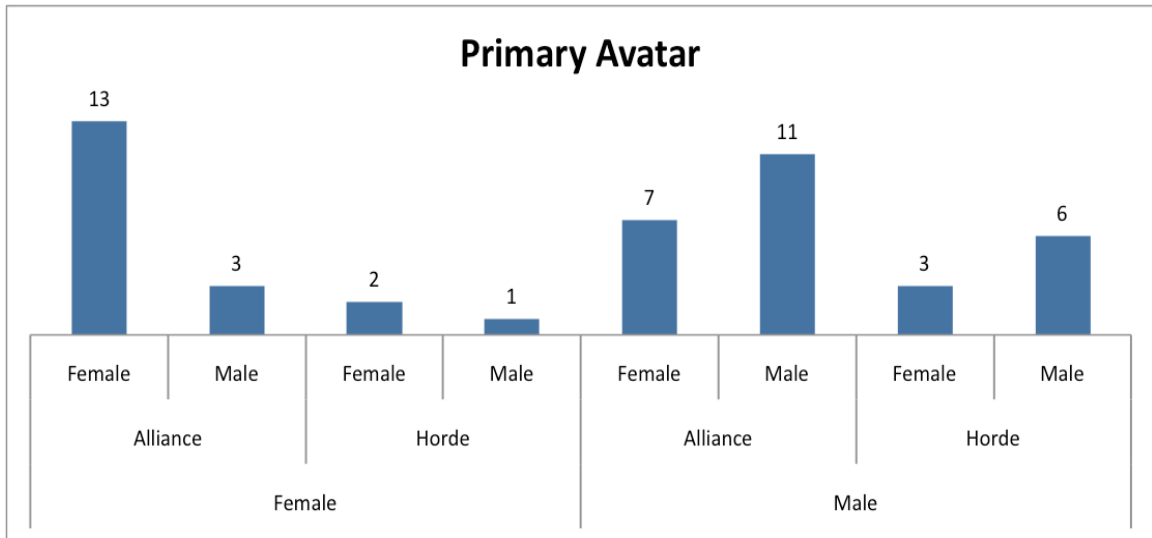


Figure 4: Gender Breakdown of Study Participants

Players were also asked about their other avatars and the male/female breakdown for them on each faction. The trend of keeping mostly or all to the same gender as the player kept across the player's primary and secondary (opposing) factions. In other words, there was still very little cross-gender play even among the other avatars (alternative avatars, a.k.a. alts) a player utilized.

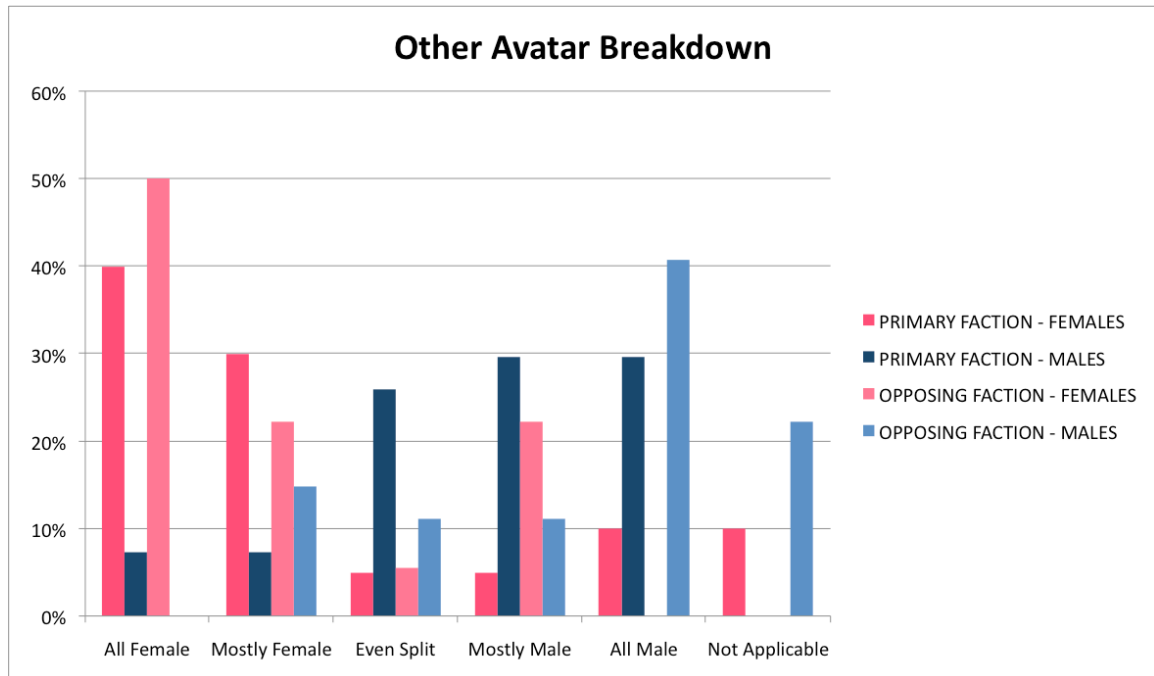


Figure 5: Participants' Other Avatar Breakdown (Primary and Opposing Factions)

Regardless of faction, players often played their own gender. Most of these players stayed completely or mostly with their own gender, and there were less players as the gender of the avatars moved toward mostly or all the opposing gender of the player. Noticeably, while players were willing to play the opposite faction from their primary avatar, no players (male or female) admitted to having all avatars on the opposite faction and gender from their primary avatar.

Why Play a Gender?

While there are many reasons for a player to choose one gender over another for their avatars in *World of Warcraft*, players tended to gravitate towards one of two core reasons: same as real world gender and physical attributes of the avatar. Though these responses are not as varied overall or per person, they are extremely similar to the categories of responses given in the *Guild Wars / Second Life* study.

The responses given in the *Guild Wars / Second Life* and the *World of Warcraft* studies were similar, however, a disconnect exists between these studies as cross-gender play was less common in the *World of Warcraft* study. Part of this disconnect could be in the length of the responses. The previous study allowed for longer responses and therefore more data than the chatterbot allowed for in this study. Participants could have given more reasons, as many in the previous study had two or three but did not give them all because they had the impression the text-box would not allow for long responses. The rest of the disconnect is difficult to determine and requires more data on the participants. The results of cross-gender play should have been similar to the results from *Guild Wars* as the *Guild Wars* study mirrors the gender-bending data from Yee's "Demographics of Gender Bending." However, many mentioned they were participants in role-play, and role-players tend to choose characters based on the stories they are trying to participate in on their servers. This provides a small twist in the data and may or may not affect the data set.

The response of "same as real world gender" was given in three of the groups: both Horde and Alliance males playing male avatars only groups and the Alliance female playing females only group. This response is dubbed the "I am" response because of the nature of players to use the sentence "because I am <gender>" in responding with it:

"because it represents me" – A_MpM_7

"because I am female" – A_FpF_1

"Mainly because I am male" – H_MpM_3

Of the Horde males playing males only, four of the five respondents used this reason. Of the Alliance males playing males only, six of the nine respondents used this reason, and

of the Alliance, females playing females only, ten of the eleven respondents used this reason. In each of these groups, the “I am” response was a strong majority of the responses. It should be noted, however, that neither of the two Horde females playing females only respondents used this reason. The “I am” reason comes across even stronger as the avatars of the opposing gender tapered off with both factions.

The physical attribute response was given in all but two of the groups: Horde female playing males and Horde male playing males. The physical attributes response types could be broken into aesthetic and behavior. The Alliance side tended to keep towards the aesthetic reasons:

“Gnome females were simply cuter then gnome males” – A_FpF_10

“Night elf females are just more appealing then the males. Elves should be slender and elegant, not buff” – A_FpM_3

“other races look decidedly male” – A_MpF_1 (when deciding on a female avatar to role-play)

The Horde side tended to offer behavioral reasons:

“I liked the casting animation the best” – H_MpF_2

“generally like the male animations better” – H_FpF_2

Part of this split could be because of the humanoid/monstrous divergence between the two groups, and players were able to find the humanoids more physically appealing gender-wise, as most of the aesthetic descriptions fell along gender lines. A part of the aesthetic reasons was one liked to play with the aesthetic attributes of the female character he played:

“The female character was more fun to customize” – A_MpF_5

Though most reasons given by players fit into the two main reasons, some reasons did not fit but were interesting nonetheless. One player wanted to play a healer and so chose to play a female because healing seemed like a ‘female’ thing to do:

“it is a healing class that wears clothes and to me feels like a female type of character” – A_FpF_1

Another female player played a male character for identity reasons:

“I identified more with it” – A_FpM_2

Her reason hinted towards the male avatar being more ‘her,’ though she was a female in real life. Other players also noted this sense of wanting to ‘play with gender,’ choosing the online world to try out a gender not their own:

“I wanted to play out a male character” – H_FpM_1

Particularly in these last few reasons, players show *World of Warcraft* to be a playground for gender in a variety of ways. It is a safe place to try out and explore gender in a way they could not in real life.

A completely different but interesting reason was acceptability. *World of Warcraft* supplies an environment that has its own rules, though often these rules are influenced by real world rules. A female player mentioned not feeling able to play a male avatar:

“it just felt socially unacceptable to play a male character” – H_FpF_2

In the real world, people who go ‘drag’ or try to present the gender the world has not assigned to them are often considered socially unacceptable. This is reflected in the hesitancy of a lot of players to do cross-gender play. While some players understand that there are others who would cross-gender play and understand the reasons for it, those

players still feel a need to fit in by conforming and playing their own gender, whether in human or avatar form.

Gender Impacts

Players were asked about how gender affected their online life. These different ways included whether the choice of their avatar gender and whether or not their gender or others' gender created an impact.

Avatar Gender

When asked about whether or not they thought their choice of their avatar's gender impacted their behavior in the game, nearly all the groups were split with some players saying "yes" and others "no." However, in two of the groups all of the participants responded with "no": Horde females playing females only and Horde males playing males only. Counting all Alliance players that responded, 50% said "no" and 50% said "yes" (n = 34), splitting the results down the middle. Counting all Horde players that responded, 82% said "no" and 12% said "yes" (n = 12). The stronger sense of "no" is on the Horde side, though the Horde side has more males compared to females than the Alliance, which may or may not account for the difference.

Players who said they felt their choice of avatar gender did not affect their online life gave reasons of simply behaving "normally." One specifically said his avatar was a representation of his real world behavior:

"My Avatar is an extension of who I am, It acts like I do, and speaks like I do" –

A_MpM_5

Players who said it did affect their online selves gave varying reasons. A few cited gender assigned behavior:

“men are more aggressive” – A_FpF_2

“I playfully flirt with anyone if I know them well enough” – A_MpF_4

Both of these are ‘typical’ behaviors of both males and females. Males tend to be seen as more aggressive, and females tend to be seen as the more flirtatious. They also cited the fact that one gender was simply treated differently than the other:

“Because people treat female avatars nicer” – A_FpF_1

Other research studies (Taylor 2003b; Hussain & Griffiths 2008) tend to back up this notion of online avatar females being treated better simply because they are female, either through the giving of goods more often or other players being easier about giving more harsh remarks when the female player makes a mistake.

Player Gender

Players were asked whether they felt their choice of gender affected their interactions with others in the game. Splitting the players between Horde and Alliance, both sides were nearly the same at approximately 30% “no” and 60% “yes” (Horde: n = 12, Alliance: n = 34). Splitting the responses by male and female, the females had a higher percentage of “yes” than the males. Females were 20% “no” and 80% “yes” (n = 19) while males were 58% “no” and 42% “yes” (n = 27). The females appeared to be either more aware of the fact their gender affected online play or their gender actually did affect online play more. The awareness is an artifact of the male being the primary gender in both society and, as such, the gaming industry. As Fron et al.’s “Hegemony of Play” mentions, the gaming industry - both creators and consumers - is primarily made up of white males. It creates an environment where women tend to be the ‘other’ gender while

men are the norm. Because of this, women are likely more aware of the fact they have a gender since male is the default position.

Males are seen as the ones who primarily play the game. The players, particularly the male ones, are aware of this fact:

“mostly men play the game” – H_MpM_1

“People just tend to assume that the players are male” – H_MpM_3

Females who play are an anomaly and are often treated differently. They either get treated ‘like a girl’ or their ‘female-ness’ is questioned:

“Well you might say they are hopeful but doubtful that each female avatar really is a girl, and are kind... just in case” – A_FpF_9

“Female players are still something of a novelty and lonely male players sometimes get a bit crazy about that” – A_FpM_9

“Female players seem to be more interested in stories and interpersonal relationships” – A_MpF_5

Players, often males, make assumptions about other avatars and the humans behind them and tend to act accordingly. Because the females are in-game, they either take away their femaleness or put the females at the extreme feminine end of the completely feminine to completely masculine gradient.

Other Players’ Gender

Players were also asked whether they felt other players’ genders impacted their interactions. Splitting responses between Horde and Alliance, the Alliance side was more strongly “no.” Horde was split evenly 50% “no” and 50% “yes” (n = 34). Alliance was split 71% “no” and 29% “yes” (n = 12). Looking at the split between males and females,

the male responses looked much like the responses for their gender impacting others: 44% “no” and 56% “yes” (n = 27). However, the females’ responses were flipped, though the gap in responses was much larger: 77% “no” and 23% “yes” (n = 19). Comparing this to the majority “no” and the minority “yes” from their gender impacting others shows a disconnect between males and females. Males were evenly split on believing other players’ gender would impact their play as much as their gender would. For females, on the other hand, the majority believed their gender would impact others while the majority believed others gender would not impact them. In other words, most females tried to treat others the same but did not expect it in return while males treated others differently and expected to be treated differently. A possible reason for this difference could be females are more aware of their gender status and how they are treated differently from males. Like Taylor’s “Multiple Pleasures” work has suggested, they do not like the difference or how it makes them feel so strive to correct it in how they treat others (2003b, p. 36).

Why Play a Faction?

Another choice that affects and impacts gender choice and behavior in game is the faction of the avatar.

Reason Behind Avatar Faction

The reasons players choose one faction over another fell into one the following categories: friends, races, good/evil dichotomy, relationship, player versus player (PvP), and story. The majority response among Alliance was friends. Often the player had friends on a server on the Alliance side, so he or she followed them to the Alliance side. This reason was chosen by: 66% of the females playing females (n = 13), 66% of the females playing males (n = 3), 80% of the males playing females (n = 7), and 33% of the

male playing males (n = 11). One Horde side, 50% of the males playing males gave this reason (n = 3). A similar reason was given by all of the females playing females as they joined the Horde side to play because of a close relationship, citing “boyfriend” and “husband.” Merging the friend and relationship categories forms the majority reason on the Horde side.

A specific race, “undead,” was given by only one of the Horde (a male playing males), while on the Alliance side, all four groups had at least one person cite races or a specific race as the reason for choosing to play Alliance. The humanoid nature of the Alliance could explain this disparity. People tend to want to play avatars with whom they can identify, and players can more easily identify with avatars that look human.

Three Alliance males playing males on the side used the good versus evil reason while two Horde males playing females and one Horde male playing a male avatar did. Between these three groups, it was males only who decided to pick a faction based on Alliance as the ‘good’ guys and Horde as the ‘bad.’

The reasons of PvP and story were each given by one person each on the Horde side. The former was given by a male playing a female avatar, and the latter was given by a female playing a male. It is a common occurrence in online play for players to assume Horde is the better side to PvP on as the Horde seems to win more often in the battlegrounds.² While this may or may not actually be the case, the rumor is strong enough to influence players’ choices.

Faction Choice Impact

² Battlegrounds are formal setups where players can go up against each other, like one battleground being similar to Capture the Flag

Players were asked whether or not they thought their faction choice influenced their behavior in the game. The results were generally split. Splitting between Horde and Alliance, Alliance side was mostly even at 58% “no” and 42% “yes” (n = 34) while the Horde side was a little stronger on the “no” side at 67% “no” and 33% “yes” (n = 12). Splitting it by male and female, the “yes” and “no” sides were fairly even for the females but the males were slightly more “no.” Males were 65% “no” and 35% “yes” (n = 27) to the females 57% “no” and 43% “yes” (n = 19).

The reasons behind these responses tended to be players letting themselves into the role-play in one form or another:

“on my druid for example I try and not kill critters and such small actions as my own small form of role play” – A_MpM_9

Players also tried to play to their side’s honor. For example, one player insisted the other side would go so far as to be dishonorable:

“i don’t want to be the type of person that ruins someone else <sic> enjoyment for a few measly point of honor” – H_MpM_8

Others played up the idea of the Horde supposedly being dishonorable and acted accordingly:

“I feel I can get away with more dishonorable play when I am horde” – A_FpM_2

“im <sic> the bad guys so it gives me a reason to act mean to the good guys” – H_MpF_3

It ends up becoming a type of role-play where people can put themselves into the fantasy *World of Warcraft* creates, perhaps losing themselves in it to get away from the real world for a while:

“because everyone enjoys the personal feel of heroism, even if it is false” –

A_MpM_1

Dressing Up an Avatar

The most common reason why players chose the armor they did for their avatar was “stats.” The majority in every group gave this reason. Looking at the Horde/Alliance split, 50% of the Alliance gave “stats” (n = 34) and 80% of the Horde did (n = 12). Splitting the participants by males and females, 59% of the males (n = 27) and 57% of the females (n = 19) gave the reason of “stats.” While not specifically “stats”, many of the other reasons given were related to this. Though one player qualified his “stats” statement:

“The best gear of course, as long as it doesn’t look just... stupid” – A_MpM_7

It represents some having aesthetic discernment when selecting their stat-based armor. Mostly given by role-players, another reason given for the player's armor choices was the choice of gear best oriented toward the avatar's likes or dislikes. However, it was not stated in their responses what those likes and dislikes were. A couple others cited ‘pretty’ and ‘heroic’ looking.

When asked how they felt about the dress choices, females mentioned the aesthetic looks of the armor:

“sometimes I wish what was the best for me was also the prettiest” – A_FpF_5

“I’d prefer cosmetic armor, but I’m sure I’d see every night elf death knight start dressing in hot pink thongs and then where would we be?” – A_FpF_9

“I liked how I played her. Other characters I played I could make ‘sexy’” – A_FpF_4

“I like feeling attractive” – A_FpF_5

Some liked the fantasy and wished for more attractive armor while others bemoaned it, thinking too much more and the armor would be - in essence - inappropriate.

Other Notations

When players were asked to add whatever additional comments they wanted, there were two kinds of responses of interest. The first was talk of cross-gender play. In the Guild Wars / Second Life study, cross gender play was common, particularly among males. *World of Warcraft* had fewer instances of it though players who did not cross-play recognized others would:

“I think it is a little strange to play a female character but I claim to each his own” – A_MpM_1

“females playing male avatars confuse me a bit. Sometimes i <sic> think of them as male, sometimes female. they <sic> are so rare!” – A_FpF_5

Both players found it a confusing but understandable occurrence. Like Lucal’s research into gender in the real world, when the presentation of gender does not match up with the actual gender of a person it causes confusion, Also a human using an avatar is a type of gender presentation as he or she is presenting a gender though his or her avatar. This is reminiscent of the remark made by a female player who found it “socially unacceptable” to play a male and so chose to play a female.

The second interesting response was in regards to the physical aesthetics of the variety of characters. One female player did not like playing the female avatars because they were too ‘girly’:

“if the chicks looked strong and capable in the games I play, I would play them”

– A_FpM_2

This statement highlights the gap between female avatars and the female humans who wish to play them. Research regarding female avatars and observation of play and comments in-game back up the idea that not only does the gap exist but players notice it. The female avatars are a fantasy, an idealized notion of female beauty and identity, and are dressed up in clothes non-realistic to combat: the phenomenon of “kombat lingerie” (Fron et al. 2007b). The same phenomenon that brings in some players, male and female, turns away others, particularly female players. This tends to echo Taylor’s “Intentional Bodies” (2003a) and Fron et al.’s “Hegemony of Play” (2007a). As the gaming industry is mostly made up of white males, they tend to create things fulfilling the fantasies of white males, often to the exclusion of others.

CHAPTER 6

OF CHATTERBOTS AND PARTICIPANTS

The earlier small scale study provided some insight on how a chatterbot fared as an interviewing agent, but this thesis allowed for a larger scale test of its viability, particularly in regards to participant acceptance or rejection of using a chatterbot as an interviewer. The second goal was to create a more productive way of interviewing.

Some of the negative results were addressed in the scripting of the chatterbot while some were left to stand as they were. The script of the bot was adjusted to keep follow-up responses from being completely repetitive and to try and give the illusion the bot was giving consideration to the respondent's answers. The issue of being able to ask questions of the chatterbot was not fixed because of the current status of the technology and my skill set.

Where Bots and Humans Collide

Of the 46 study participants who completed the chatterbot interview, 45 completed the opinion poll regarding the chatterbot. Of those, 35 answered the free response for what they liked about the chatterbot, and 36 answered the free response for what they did not like.

Responses ranged from “really like using it” to “really do not like using it.” The “really like” and “like” grouping (together totaling 20) was significantly stronger than the “really don’t like” and “don’t like” grouping (together totaling seven). The “am neutral” opinion was 18. Even with the neutral opinion being high, the weight is towards a positive outcome, or a good result for the bot.

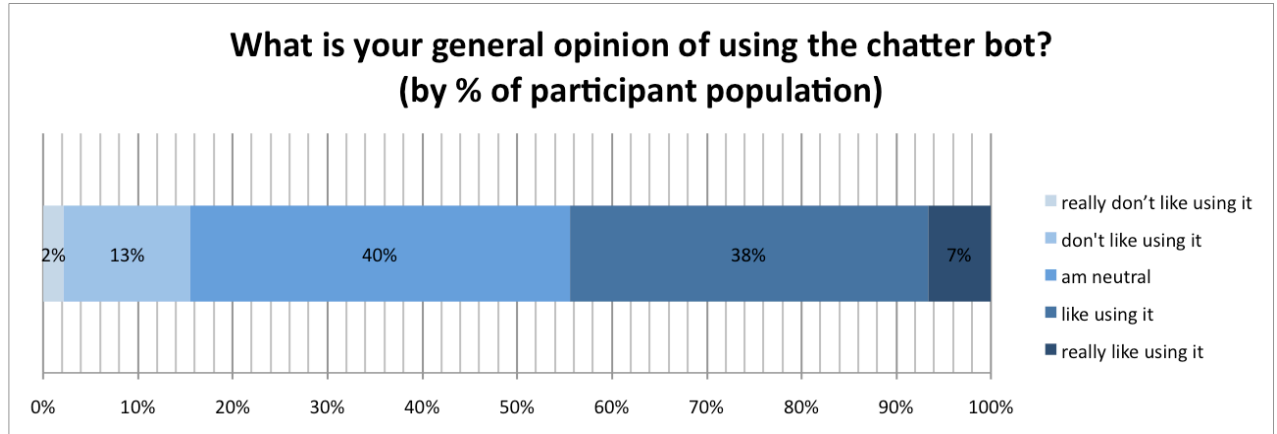


Figure 6: Participant Opinion of Chatterbot

Much of what was liked and not liked about the chatterbot confirmed findings from the preceding experiment. However, some things went better and worse because of a different system and changes in the interviewing style.

There Was the Good

The bot's intended good qualities came out through the respondents. It was supposed to be usable while giving the users a conversational tone for the interview they could control. Out of all the respondents, seven said using the chatterbot was "easy." Similar responses included "quick" and "convenient":

"convenient way to interview people without taking up a lot of individual time"

These kinds of responses were in line with the goal of using the chatterbot. In order to be useful to researchers, the bot needs to be all those things so that participants are not hindered in their experience. A secondary kind of response was in the participants who said it was "interesting":

"better than a boring 'click this button or that one kind of questionnaire <sic>'"

While unintentional, it was a good result. Both sets of responses make up part of the necessary environment for the chatterbot users to have a pleasant experience. A better experience for the participants makes it easier for researchers to gather data and use the bot as a collection tool.

Like the pre-test, many respondents liked the way it allowed them to have time and space to answer questions without feeling pressured:

“gets you thinking about your answers more”

“think about each question as it’s presented to you”

“I feel no compulsion to fit what I intend to communicate into a preset box”

The chatterbot allowed participants to consider each question as it was presented to them. This also created a semi-conversational feel that was shown in the previous study as well:

“felt like an interview with a real person”

“felt like it was responding in real time”

The bot was designed to mimic an in-person interview, and participants liked the feeling the mimicry provided to them. It also gave them this feeling without having someone on the other side, which for some, allowed more honest responses:

“nice not having to talk to a person so I felt I could answer more truthfully”

These last two sets of responses fall in line with Newman et al.’s and Peiris et al.’s studies. Participants like being able to have the feeling of a real person without the actuality of talking to a real person. Talking to the bot allowed participants to get the feel of an interview but with the time and anonymous consideration of a survey, blending many of the good qualities of the two.

Then There Was the Bad

Though the chatterbot does bring a lot of the good of both interviewing and surveying, chatterbots have their own negative qualities. Participants cited three main issues they had with using the chatterbot: having to copy/paste chat logs, the inability to ask questions of the bot, and the occasional incorrect follow up. The mechanics of having to physically copy/paste chat logs were a bit disconcerting to the participants:

“A lot of jumping around with the copy pastings”

Requiring the participant to jump around from one browser window to another was a bit awkward and not an ideal scenario. This issue seems more to do with the mechanics of data collection and not necessarily a flaw with the data collector (the bot) itself.

The inability to ask questions and incorrect follow-up questions were other reasons cited for not liking the bot. Sometimes the response from a participant would trigger a follow up that did not quite work with the response, and in conjunction, because the mismatch would cause confusion, participants then could not ask questions of the bot to clarify:

“there was no way to ask the bot for clarification. Some of the questions were vaguely worded and attempting to answer them would present you with a question you thought you answered a short while later”

“Some of the follow-up questions were a little difficult to answer, as they didn’t relate quite as closely as a human follow-up question should have to the answers I gave”

The script worked well, but not well enough to work every single time. However, all of these issues were known before the start of the study, and with better code and more advanced intelligence behind the bot, they can be remedied.

Where Bots and Researchers Collide

When building steps towards a future goal, the building of the step is just as important as the step itself. The following both what went wrong and what went right so others can attempt to replicate or improve the findings.

What Went “Right”

The major things about the chatterbot seemed to work well from both the participant perspective, as mentioned above, and use as a methodology. From the researcher perspective, it allowed participants to schedule interviews on their own time. Some participants cited they liked being able to start and stop the interview. They could then come back to it later like they would for a SurveyMonkey-type survey. The participants were able to keep control over the timing of their interview. To do the same in a person-to-person interview would require them to either have the interviewer wait on them or ask the interviewer to start up again at a later time. Both choices could create discomfort or awkwardness on the part of the interviewee.

The anticipated post-questions also seemed to work well, to an extent. From the chat logs, the follow-up questions flowed well from the responses. While they did not work for every follow-up for every interview, they did work, giving the illusion of a human interviewer.

The service also logged chats well, often when the copy/paste mechanism utilized for the methodology incorporating SurveyMonkey would fall through.

What Went “Wrong”

While there were a few things that went right, there were many that went wrong and should be reconsidered and rethought before attempts at replication are made. Most

of the issues were with the service's implementation of the chatterbot technology and not the methodology of the chatterbot itself.

During the course of creating the study, the service used to support the chatterbot was changed from using E-Program and AIM to using pandorabots.com. This change was made to insure a more stable up-time for the chatterbot. While writing the IRB protocol, I continually monitored the up-time status of the E-Program system. Right before deployment, the E-Program system went down completely for multiple days. It was during this time period that I decided to change the system to something more stable. After reading reviews and evaluating the Pandorabots system, I changed the service to Pandorabots with the idea that not having to connect to an AIM client would increase the uptime and allow more users, as not having AIM would no longer be a barrier.

However, a different barrier was then created in that browser-based Pandorabots was incompatible with some browsers, notably Google Chrome. Using Google Chrome caused discrepancies in the chat-logs, leaving chunks of the chat completely unlogged and missing. The html form of the bot also kept breaking mechanically on Chrome, sometimes not working at all, assumingly because of plug-ins or other Chrome personalizations.

Because the logs were being stored through the use of a service, data was occasionally lost. A few chat logs were lost when the service would clear out the server. Some were recoverable due to the copy/paste procedure.

Non-alphanumeric characters also caused issues with the logs. They would sometimes translate as enters and either break up the log recordings or cause the web-form based chatterbot to incorrectly take in the equivalent of an "enter" key.

As mentioned earlier, another issue was copy/pasting the text for the participants. It proved difficult and a little disconcerting for the users to have to go to another browser window, use the chatterbot, then copy and paste their text.

One issue was with the question/answer system itself, from both the bot and interviewee sides. From the bot side, the bot had an inability to ask more specific follow-up questions of the participant. Often the responses being given would have been better served through more data from the interviewee in their response. From the interviewee side, as mentioned earlier, respondents could not ask questions of the bot to clarify confusions.

Where Bots and Interviews Collide

Interviewbot can be compared to a scripted in-person interview though it is a different experience. The differences between the two are both good and bad. For Interviewbot, the pace of the interview is in the interviewee's control as opposed to an in-person interview where the pace is a mutual arrangement. Interviewbot also provides privacy that an in-person interview does not allow.

The amount and kinds of data also differ. In-person interviews are more flexible, allowing the interviewer to run off script and ask questions to gather more data when a response of interest comes up. Not only was the data not as thorough, but the responses were shorter because of the size of the text box. While it is difficult to ascertain whether or not the responses were similar to other research with chatterbots (data from the studies is unavailable), it seems they would be somewhat similar in size as most chatterbots tend to use single line input areas.

Compared to contemporary bots, Interviewbot seems lacking in the experience it provides its users. The experience provided by a well-written bot like Cleverbot (Carpenter 2011) is engaging and interesting. When it breaks, it gives responses that are ambiguous to make the breaking less obvious. Users can also ask questions of it, getting responses that seem interesting. Interviewbot is weaker in this respect, but Cleverbot tries to be ambiguous at times and is not designed to dig for specific information.

The Issue of Sample Size

In terms of population sample, the study both met and fell short of expectations. The chatterbot was used to increase the number of interviews possible with a constrained time frame and resources. In this respect, the chatterbot succeeded, accelerating the rate of interview data collection to nearly one half the time with three times the subjects. Data collection in the first study took almost two and half months. *Second Life* and *Guild Wars* had 10 and 15 people respectively, less than 15 participants for each game. In the second study, Interviewbot was able to procure 46 interviews over the course of about a month and a half, a good size for a qualitative study. One advantage to this approach was that the interviewees scheduled and conducted interviews on their own time at their own pace.

In addition, the sample size is only the number of participants used to analyze the question of gender in *World of Warcraft*. It does not account for the numbers lost on the consent and Interviewbot pages of the SurveyMonkey. The SurveyMonkey showed 29 people dropped off once getting to the consent page and an additional 14 dropped off at page for connecting to and logging Interviewbot's chat, which was the page after the consent form. Totaling these numbers, 43 people found and came close to being participants but did not end up following through. This makes for a total of 89

prospective participants, though nearly half did not complete the study. The numbers add somewhat to the efficiency of the methodology, but as they did not actually participate, the drop offs do not count as much towards the success or failure of the bot as an interviewing technique. The bot did not have enough data to be either more or less efficient than in-person interviews (efficiency being defined by a higher participant to drop off ratio). However the bot did prove to be generally more productive than in-person interviews.

The reason for the drop off of participants is uncertain though some guesses can be made. In normal online surveys, participants tend to drop off once they see the consent form and get an idea as to what they must actually do. Consent forms can be daunting and a slight deterrent to participants. A reason for eight of the drop offs on the Interviewbot page was the service being down. Some participants mentioned having issues with having to copy/paste the chat logs so the unwillingness to go to a secondary browser window and copy/paste logs could be another reason.

While this study's population size was higher than the first study's population size and more than many interview-based studies, it was still below the desired sample of 100 or more. The low participant size could be due to the fact participants were not compensated, the recruitment ability of one person, and other factors. Compensation tends to be a strong draw for participants as they like being given something for their time, even if the time given is small. Also, I was the only person able to recruit for the study so the sample was limited by the time I was able to give to recruitment – researching various avenues, getting approval to post in them, and then actually posting and monitoring the postings.

CHAPTER 7

OF LINES IN THE SAND

As Gee stated, there are three parts to our online selves: the person, the avatar, and the human projecting into the avatar (2003, p. 54). All three are complex entities in themselves, and when building and examining the bridges between the three, the relationships get even more complex. Gender is just one of the issues making the relationship between the player (the human) and the avatar complicated. We are born with our real world genders, but we can choose the gender we play in game. The mismatch between gender in the real world and gender in the game presents an interesting opportunity to study both conscious and unconscious gender behavior and application.

A Gender Thing

Examining the relationship between the *World of Warcraft* player and his/her avatar shows signs of players bringing their online gender into their avatars and therefore into *World of Warcraft*. Players make decisions about their avatars based on their real-world gender with players often choosing to play an avatar simply because its gender matches their own. Because avatars are such a part of us, driven by us, gender from the real world human behind them cannot help but leak into and through the 3D avatar on the screen.

Of Gender and Avatars

The results for this study mostly matched up to past research though there were some small cases where the results contradicted past research. The reasons players choose their avatars were extremely similar to the reasons Hussain and Griffiths (2003), Yee (2003), and Maccallum-Stewart (2008) found though participants had the ability to give more nuanced responses. Participants choose their avatars because the avatar was the same gender as them or because of either physical or aesthetic appeal. An interesting note was females who played on the Horde side did not give the self-gender reason for either gender they played. Another area where the findings matched the past research was in the reasons participants chose a faction to play. Yee (2006) found one of the motivations to play was in relationships – people played because friend or relations did. In this study, friends and relations was the strongest and majority reason why participants chose one faction over the other.

The one case where the results contradicted past research was in the instances of cross-gender play. Other studies have found a majority of players tended to play an opposite gender character (Turtle 1995; Hussain & Griffiths 2003; Yee 2006). However this study found most of the respondents did not cross-gender play. Most of the participants played avatars the same gender as themselves, confining cross-gender play even across alts and factions.

There were also a few single instance match-ups to past research. Turtle's (1995) and Lucal's (1999) research found people get confused when people do not appropriately follow along gender lines. Two participants explicitly mentioned confusion when talking about why people cross-play. Another instance involved Shaffer's gender roles (1999) when a participant mentioned playing a healing class as a female because it was a

“female thing to do.” When one participant mentioned playing a male because it was “more [her]” or another’s comment about not playing particular female avatars because they were too sexualized, it is reminiscent of the embodiment and immersion work of Taylor (2003b) and Turkle (1999) as players like to be able to place themselves into their avatars.

Tomorrow’s Research for Gender and Avatars

Future research has much to explore regarding gender, avatars, humans, and the relationships between them. Further studies using larger population samples and across more games would be beneficial for both depth and breadth of concept. More people would allow for a greater degree of generalizability of these findings. Another point of inquiry is to further explore each of the points of interest brought up. Many of the responses were kept short and to the point, touching briefly on the topic before moving to the next: avatar choice, faction choice, perception of other avatars and genders. Being able to dig more deeply and ask more questions would provide better insights into each topic.

Studies should examine the relationship between gender and *World of Warcraft* race as factions only represent part of the gender relationship. Each faction within the game has its own general design regarding how it represents gender. For instance, looking at the Horde side, how gender shows in the Undead is different then how it shows in the Tauren. The other half of this is to look at the player’s actual race, as opposed to their fantasy *World of Warcraft* race. Actual race informs how we see and experience gender in others as well as ourselves, and our avatars are as much part of us as we are them. How someone decides and selects pieces of his or her avatar would be

different in someone who is Caucasian versus someone who is Asian. Due to time and scaling constraints, this study was not able to look at either issue even though they are both an important part of gender and identity.

A Chatterbot Thing

The overall result for the chatterbot was positive, enough to make the trial a general success. Though there were many issues, they are not so insurmountable as to make an interviewing chatterbot impossible.

Of Interviewbot

The results of the study match a lot of prior research with some new additions. The bonds the participants were able to make with the chatterbot were extremely similar to the attachment Weizenbaum noted in his ELIZA study (Weizenbaum 2003, p. 370). Interviewbot's participants had the same sense of convenience, conversation, and trustworthiness as ELIZA's patients.

Participants' responses were similar to research later on into CASI. While somewhat different, the CASI style is the same basic system though the chatterbot system is a bit more fluid in conversational style. However the nature of the system gives it many good qualities, such as privacy and convenience (Newman et al. 2002), Participants for Interviewbot reported liking these same features. Another CASI study showed participants favored conversational tones that simulated the conversational style of an in-person interview (Peiris et al. 2000).

The results also strongly matched De Angeli et al.'s research (2001) into chatterbots. De Angeli et al.'s study added to Peiris et al.'s work by adding in a conversational feel to the timing as well as the tone of the questions. De Angeli et al.'s

work is mimicked through Interviewbot in that participants found Interviewbot “easy,” “convenient,” and “conversational.”

Additionally, as an interviewer, Interviewbot showed to be more productive than a single interviewer though not necessarily as efficient. The participants from the initial gender study in 2009 to this study were doubled over the course of half the time. Also, the inability to ask questions of the bot remains an unresolved issue. Participants would like to be able to ask questions of the bot when they needed clarification.

Tomorrow’s Research for Chatterbots

The AI of chatterbots is still weak, though the technology is constantly improving. Applying more complex research in AI would make for far better bots, particularly research into the Turing Test and ELIZA problems. The ELIZA system makes a good standard. However, it does not yet have the capacity to ask questions on its own, as it merely reflects questions back on the user. The biggest fix would be to have a bot better able to parse and understand language, particularly for key words. Though this is a language processing issue and has been difficult to fix. Even if it is something that is never fixed, some types of interviewing are similar to the Rogerian psychiatrist. Similar in the fact they are built on specific rules to follow when questioning subjects. These can be coded into a script that does not look for key words but instead gives up typified responses.

There are some specific suggestions for future bots, particularly in regard to the technology itself. The next round of research should include more intensive testing for both browser compatibility with the html page and the chat-logging capabilities. Bots should have the ability to log chat and attach a matching code from the user to the log.

An alternative is to incorporate the chatterbot into the survey instrument so the log is automatically attached to the chatterbot and participant data. Constant and consistent backups would keep these logs from being lost. An alternative is to simply use a personal server so that data loss can be more easily monitored and controlled. The input text box size must be reconsidered. While the single line box kept responses fairly short, which can be good in its own way, a larger box would allow for longer responses and remove some of the false enter issues.

Tomorrow's Research for the Methodology

As a methodological tool, the chatterbot is not intended to replace the standard survey or interview. However, it does show some promise for certain types of studies, either because of the nature of the study or the type of data needed for the study. The chatterbot would be useful in studies where using an actual interviewer would be a problem, such as psychological studies for people with types of trauma – similar to Newman et al.'s work. Other types of studies include when large amounts of data are required, like the original intended use, but the types of questions are reasonably generic to the population. An example of this is for game studies, like this one, where the focus is on choices or behavior and the specific game is not relevant to the questions. Another example is where the game is relevant but the questions need to be standardized across multiple games, referred to as “latitudinal game studies.” Future research into these types of studies with the application of the chatterbot methodology would prove beneficial.

Final Note About Avatars

Distinguishing between the human and the avatar can be difficult. They are both born and reaffirmed through the same culture. Trying to say which is the human and

which is the avatar is like drawing a line in the sand on the beach. It is nearly useless as eventually the tide will come in to wash it away, but it gives you a place to start.

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